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THE UNIFICATION OF SCIENCE.

BY ALFRED ARNOLD.

"The Law of Relativities" implies a universal science. This law—that phenomena or things perceived are only the effects of methodical relations or interactions of other things—is an accepted scientific fact, evident in our experiences.

The following paper gives the final analysis of all Being, harmonizing, and bringing into the field of science, physics, metaphysics, and religion.

First Principles.

Principles and phenomena, jointly, constitute all Being—the inner and outer worlds—self, and not self. Principles are indestructible, inner and outer relativities; and Phenomena, or things perceived, are effects of their unstable relations. What we perceive as matter is a phenomenon; it exists only as an effect of unstable interactions or relations of inner and outer principles. It has no abstract existence, either in the outer or the inner world. Professor Huxley, in "Lay Sermons," says: "Matter may be called a form of thought." Dr. Tyndall, in "Virchow and Evolution," says: "Matter is that mysterious something by which all has been accomplished." Physicists, generally, accept the Boscovitch theory, that matter consists of immaterial atoms of force. These irrational, contradictory definitions result from considering matter as an abstract, indestructible substance. Mistaking unstable, phenomenal matter for indestructible physical principles leads to belief in personal annihilation. But, as that which appears as the material body results, like all physical phenomena, from the interaction of outer physical and inner conscious principles, we know that neither the phenomenal body nor the interacting physical principles *cause* consciousness; and, as neither the creation nor annihilation of these interacting physical and conscious principles is thinkable, we are forced to conclude that they are ever-existing; hence immortality of mind and body; so-called death being only a change in the conditions of the phenomenal body. Annihilation and creation are only changing the adaptations of constant means to unstable phenomenal ends, so that, the creation of new ends being the inevitable annihilation of the old, all creatable things are destructible; only physical and mental means or principles always will and—though little of the past is remembered—always did exist; that either conscious or physical principles, or that *any* indestructible thing had a beginning is unthinkable; whatever can be done can be undone; to alternately do and undo phenomena is the Order of Nature, but the Principles of nature can be rationally thought of only as constant; without beginning or end.

The following deductions from Natural Science give the constituent parts of all Being and their general modes or methods—the Inexorable Order of Nature:

I.

Relativities, and their realized relations, constitute all being. The relativities are constant inner and outer principles, and their changing methodical relations or interactions result in states of consciousness or phenomena—definite, unstable, perceived, physical and mental being. (2) We know that a phenomenon results from a relation, because, like no other thing than a definite relation, its annihilation is the inevitable creation of another. And as only principles are potent and indestructible, they are, inevitably, the elementary relativities. (3) Methodical annihilations and creations of specific relations of principles—phenomena, or things that appear—constitute the order of nature. Appearances are not unlike the things that appear, because the appearance is the identical and only thing that appears. As this appearance, or thing that appears, results from the interaction of both inner and outer principles, previous to this interaction, not the thing, but only its cause existed. As the forms, motions, and forces of waves, which appear to us through physical sense, result from the interaction of inner and outer principles, they are only joint inner and outer existences; therefore undulating ether is an imaginary substance used to give a definite idea of the modes of outer principles whose realized relations with inner conscious principles are heat, light, color, etc. (4) Atoms, molecules, and molecular motions are only working hypotheses employed to fix a vivid, definite idea of principles, their combinations, relations, and methodically changing relations. (5) Science has resolved all matter to force, and force to potentiality; and, as we know that potentiality is only a relation of principles in the order of nature, we know that force is only a relation; its annihilation being the creation of the potential relation. (6) We know that phenomena are the realized relations of dynamical and conscious principles, because only modes of motion pass to and from the seat of consciousness.

II.

Consciousness inevitably implies personality—self—the Ego. Sensation, thought, emotion, memory, want, volition, power or effort to relieve, and relief are, as persistent principles, properties of self; and their unstable, methodical, realized relations with each other, and with other principles, are phenomena or experiences. (2) Harmonious relations are pleasurable, discordant relations are painful; therefore pleasurable relief from our several wants is proportionate to our knowledge of the essential principles, and of the essential methods of bringing them into the essential relations. Hence the value of knowledge, and our incentive to acquire it. (3) We cannot reasonably assume that any specific thing is unknowable, because only infinite knowledge can know the limits to future finite knowledge; only abstractions —nonentities—are impossible to knowledge. (4) Self and not self imply each other; they are joint existences. They consist of both principles and the relation of principles, and are, therefore, ever existing, remaining constant through the successive changes of their phenomena. But, as memory does not extend to our known personal identity of early childhood, our previous identity is of course forgotten; present memory comprises nothing before, and only an infinitesimal part of our momentary experience since, birth. Self, or personality, consists, either of ever-existing principles, or of only unstable phenomena subject to creation and annihilation—there is no middle ground. And it is absurd to assume that infant body and mind is not a new relation of previously existing personal, as well as physical, principles; assuming that personality results from only impersonal principles is equivalent to assuming that it results from nothing, which is absurd.

III.

As states of consciousness—phenomena—result from physical and mental interaction or relations, mind and body are inevitably inseparable; and the study of Biology is only searching for the physical, sensiferous, and mental principles; the indestructible personality discerned only through our reasoning faculties. (2) We have the same evidence that our bodies, perceived in dreams, trances, etc., distant from the torpid body, are seats of consciousness or self, as that our wakeful bodies are—viz., they are, to self—materialized seats of conscious, personal identity; they are sensiferous, thinking, emotional bodies. Therefore, as these several bodies comprise the material, sensiferous, thinking, emotional principles—consciousness or self—it matters as little how long or short the duration of any specific body, as of any other unstable phenomenon; for each body being only a specific relation of physical and personal principles is, when destroyed, as inevitably followed by another as are the properties of matter when destroyed, or as the relation of a moving man on a chess-board is followed by another and different one. (3) As phenomena are relations of both personal and external principles, like phenomena are inevitable to like inner and outer relations, but unlike phenomena result when the inner relations differ, as in the color-blind, lunatics, clairvoyants, and dreamers, who perceive phenomena not perceived by others at the same time and place, and others perceive phenomena not perceived by them. The usual state of personal relations is called the normal state, and unusual states abnormal; all states are, of course, equally natural, and the most pleasurable state proportionate to pain, whether usual or unusual, is the most desirable state. (4) Sensiferous organs present only unstable, physical phenomena. The so-called indestructible elementary substances are unstable materialized relations, and their disappearance in chemical combinations is their total annihilation, and the creation of other specific relations, or wholly different material things. (5) Time and Space are principles or relativities, from whence the phenomena extension, form, limitation, motion, succession, etc., are derived.

IV.

Self and not self are, then, jointly Nature, as inseparable as God and the intelligence that Nature displays. God is in us, and we in him. "In him we live, and move, and have our being." As principles are only methodical designs, they are attributes of him. He is Universal Being—the ever-existing, omnipresent, omniscient, omnipotent "I AM"—and all conscious beings are integrals. Our knowledge of him is infinitely greater than our knowledge of man, because we discern in man only an infinitesimal part of the intelligence we discern in Nature.

Creation and Annihilation.

Physical force and all other physical properties are subject to practical creation and annihilation. Physical force is static when it pertains to rest. It is created and annihilated by changing the space relations between the fulcrum and two ends of a lever. As the substance of the lever remains constant, the static force created is only the physical realization of a relation of principles pertaining to space—only the result of modes or methods—and we create it and annihilate it by methodically changing the space relations of these principles—*e. g.*, the static force of gravity is increased and diminished by less or greater distance.

Force is dynamical and effective when it pertains to motion. A body at rest on the surface of the earth is moving round the centre of the earth more than a thousand miles an hour; to stop this motion, the body must be moved in the opposite direction with a like velocity relative to its then position on the surface of the earth; so that both motion and rest are constant conditions of every mass and molecule of matter. They are two relations in space. The changing space relations between molecules or masses we call motion, and the unchanging relations we call rest; and the interchange of these relations we call force or energy. The body at rest on the surface of the earth had not, nor has it now, any mechanical force, but it was subject to a potential relation of principles pertaining to time and space, and changing that relation destroyed that potentiality, created force, destroyed that force, and created another and different potentiality in the opposite direction. There is no conservation of physical energy. There is no more energy in a lifted than in an unlifted weight, in a bent than in an unbent bow, nor in motion than in rest. So-called potential energy is a specific, inert relation, which must be totally destroyed and another created to bring energy into existence.

The potentiality of a pound weight moving eight feet per second equals one foot-pound of power. Now change the relation of space to time, from 8:1 to 16:1, and it increases the potentiality fourfold. As the same constant pressure or force that gave the velocity of eight feet per second, or one foot-pound in one quarter of a second, applied through one foot of space, gives sixteen feet per second, or four foot-pounds in half a second, applied through four feet of space—all else but relations pertaining to time and space having remained constant—it follows that motion and dynamical force are only relations of principles pertaining to time and space, and we create and annihilate them by methodically changing the relations of these principles. The force that sinks an enemy's ship exists not in the powder and ball, but is a specific relation of dynamical principles pertaining to time and space, to which powder, ship, and ball are, as our analysis of motion showed, equally subjective; and this relation is created by methodical action of finite mind or will. Therefore, that mental effort which, *through whatever means*, changes the relations of these constant principles—as immaterial as the will to which they are subject—creates and annihilates physical force, motion, and rest, whether they relate to masses, as cannon-balls, or to the molecules of the brain. And as these methodical principles are intelligent designs in the Order of Nature, it follows that the elements of the Universe are only attributes of Supreme Mind, of which finite minds are integrals.

When the mind brings the proper dynamical principles into proper relations, and then, through the brain, nerves, muscles, hand, and cue, realizes the relations as physical sense, by moving hand, cue, and billiard-ball, each impact of cue, balls and cushions of the table, is a creation of a specific physical force, secondary to the will-force. The player, previous to each stroke, mentally brings the proper principles of dynamics into proper relations, thus originating a special law to govern the ball after it leaves the cue, and then will-force, by giving proper motion to brain molecules, muscles and cue, executes this law through all its ramifications of secondary forces and motions in accordance with his original design. When the dynamical principles are brought into proper relations, the created forces are as truly realized to mental sense as they are to physical sense when, afterwards, physically expressed. The first is cognition, the second recognition. Though we are physically insensible to the will's action on the brain, we *are* sensible of its effect on the hand and cue, and tracing the physical force back, from the cue to the first impulse of the brain, inevitably traces the will force *to* that impulse.

Now imagine that physical force is indestructible, and that the force of each impact of the cue was communicated to it, from molecule to molecule, throughout all time and space, governed only by physical, which is mechanical law. Imagine that this mechanical force, in the form of chemical action, in the brain of these players evolved the thought that they would play this game of billiards one year thereafter, and at the end of that year evolved another thought that they would postpone the game another year. And then that this persistent force evolved the thoughts, wills, and physical actions of these players during these two years which resulted in the written history of England by one, and that of America by the other, and at the appointed time, to a moment; this indestructible force gave the molecules exact, proper directions and velocities, at each proper impact of the cue, and at the same time deluded the players into the belief that *they* and not *it* originated all this. Imagine all these experiences to have originated only in physical or mechanical law, and we comprehend the absurdity of that "scientific imagination" which "discerns in matter all the promise and potency of life."

As changing the relations of anything is—like moving a man on a chess-board—the annihilation of the old relation, and inevitable creation of another, so all so-called decompositions of matter are total annihilations of the old matter, and actual creations of the new. In the decomposition of water the relation of principles which constitute hydrogen and oxygen are brought into being only when those which constitute water are annihilated; metals are oxidized in water only by destroying water relations and creating others; if water were hydrogen and oxygen, it would be combustible and explosive, because things exist only in their qualities; decomposing water with the poles of a battery distant from each other is a practical demonstration that water is not *combined* hydrogen and oxygen. Inertia exists not in rest, nor in constant velocity; but changing these relations to either accelerating or retarding motion creates it. Chemical discoveries of new kinds or qualities of matter result only from methodically changing the relations of chemical principles; hence the persistence of these discoveries. Experimental research is only searching for unknown methodical relations of principles essential to the existence of some specific physical thing. Matter, then, persists only as a constant succession of annihilations and creations; its persistence being the joint persistence of relativity and relation.

Pleasures and pains are realized relations of physical, mental, and moral principles, and knowledge of these principles enables us to create the former and destroy the latter—as fire, wisely employed, results in pleasure; but pain, caused by incendiary fires, is a specific relation of physics, vice, and folly, created by the incendiary.

Physical things, then, are brought into being by methodical mental power, whether it be the fiat of God in a physical universe, or of finite power in the vocal expression of thought, or the movement of a steamship—as when, in practical affairs, the principles of chemistry, mechanics, law, trade, morals, etc., are carefully considered and brought into proper relations by voluntary mental power, which then physically demonstrates, or realizes as physical sense, the desired relation. Not these constant principles alone, but the Supreme, or the finite designer and creator of their several essential relations, is the *cause* of definite physical being.

Evolution.

That the Order of Nature is inexorable and consists, in part, of the freedom and power of finite beings to create pleasurable and destroy painful relations, to the extent of their knowledge of its methods, and that its modes of progress is "survival of the fittest," is evident. But that theory of evolution which wholly subjects mind to physical law is contradicted by science, and by every willed action of its self-deluded believers. Man's physical power is proportionate, not to his muscle, but to his knowledge and wisdom. Suspend all will-power over matter for one minute in any great city, and no more would be heard of the evolution of intelligent automata. Human progress comes not from waiting, Micawber-like, for something to turn up or be evolved, but from the consciousness and execution of personal power to create pleasurable relations from omnipotent, constant principles.

The existence of will power over matter, being as evident as the existence of reason, can, no more than reason, be reasoned out of existence.

Supreme law, or the Order of Nature, is founded on justice; and human law, or the order of State, is intended to be so founded; not justice to an isolated person—no such person exists—but to the person as a part of the Universe, or as a part of the State. Most pleasure results from knowledge of, and obedience to, these laws; but each subject is free to disobey them through ignorance or through vice—which is ignorance of true policy—and suffering the penalty tends to his education and virtue. Thus, Supreme design or law makes progression—"survival of the fittest"—inevitable, and secures, without amendment, all the harmony and pleasure possible to individual freedom and finite knowledge, in every stage of progress. And, moreover, law, penalties, and freedom are essential to the existence of conscious beings—no suffering, no wants; no wants, no action; *no* action, no life. And life is possible only to freedom; to be *wholly* subjective is to be wholly passive, and to be *wholly* passive is death. Thus, by analyzing phenomena, we find absolute perfection in what otherwise appears like imperfection.

It needs no argument to show that Supreme Intelligence reigns in the order of nature, because all get intelligence from there, and none can suppose it comes from where it is not. And, furthermore, as intelligence implies personality, and personality emotional, sympathetic feeling; answer to prayer—sincere, ardent supplication for a harmless object, either uttered or expressed in thought—evidently accords with the Order of Nature. But, through unwisdom, few just and needful prayers are offered, and few are answered.

Two States of Personal Being.

Self occupies two alternate normal states of being—wakeful and sleeping states. The so-called abnormal states—somnambulism, clairvoyance, hallucination, and illusion—may be called semi-sleeping states.

The fact that some persons are, at the moment they wake, always conscious of dreaming, though the dream may escape memory the next moment, and that we often discern consciousness in others in partial or unrestful sleep, though they do not remember having dreamt, and that pleasant dreams make sleep no less refreshing and invigorating to both mind and body, and that somnambulists and clairvoyants retain self-consciousness, but retain no memory of it, makes it reasonable to conclude that consciousness and mental activity are constant in sleep, and in all other torpid, inoperative conditions of the material body.

That physical things perceived in dreams, including a new body distant from the torpid, sleeping body, are as real as those perceived when awake, is demonstrated so far by the real physical light seen by clairvoyants and somnambulists, and as all physical things are relations, all realized relations must be equally real and practical for the purposes to which they are adapted; the shadow is as real as that which casts it—in fact all being is real; the question Science puts to Nature is not What is real? but What is? The words unreal, unnatural, and supernatural have, in our present state of knowledge, no meaning whatever. The body realized in dreams is to self a vivid, materialized, sensiferous, thinking, emotional body, and the wakeful body is to self only this; all physical phenomena of either state are, to the person changing states, destroyed, and others, differently conditioned, appear in the other state. Both physical and mental sense being equally real in both states, it is absurd to assume that they are relations of real things in one state and of nothings in the other; from nothing, nothing proceeds; but physical phenomena proceed from inner and outer means then and there existing, and changing the existing means changes the phenomena. All means, modes, and methods are subjects for experimental research. As the organs of sense are inoperative in the sleeping, torpid body, mind in dreams is as dependent on the body distant from the torpid body, and on other physical things then perceived, as it is on the torpid body, and things perceived when awake. Greater rapidity of thought, with less circulation of blood in the brain, is almost conclusive that self is not in the sleeping body, but is in the dreaming body distant from the sleeping body.

To explain these phenomena by the words "abnormal," "imagination," "delusion," "indigestion," etc., is only expressing ignorance of the principles in nature of which they are all the realized relations. And as our lives are nearly equally divided between these two states of being, and as changing states without interruption of consciousness suggests immortality of personal identity, mind and body, in their several states or conditions, should occupy the first place in scientific investigation. Religious Faith has done its work well, but advanced minds now want demonstrative proof of a future life more than they do any other new discovery.

Universal Science.

Rational pleasure being the sole object of knowledge, Science may be best defined as knowledge of specific methods of preventing and destroying specific pains and creating specific pleasures. It enables us to create pleasurable relations known to the ignorant only as "favorable circumstances," or "good luck," and to avoid or destroy painful relations, known as unfavorable circumstances, or "bad luck;" and as pleasures and pains are the realized relations of physical, mental, and moral principles subject to our wills, to the extent of our knowledge and wisdom, Science should include all, in one general method.

We know, then, from a rational analysis of our experiences, that physical and mental phenomena are unstable, realized relations of constant principles, and as these principles form the basis of universal being, they are the proper basis for a Universal Science broad enough to include self-respect, knowledge of God, profound, logical, religious sentiment, and evidences of immortality.